

DOCUMENT RESUME

ED 416 294

UD 032 161

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TITLE Urban Delinquency and Substance Abuse. Initial Findings.
Research Summary.
INSTITUTION Department of Justice, Washington, DC. Office of Juvenile
Justice and Delinquency Prevention.
REPORT NO NCJ-143454
PUB DATE 1995-08-00
NOTE 37p.
CONTRACT 86-JN-CX-006; 86-JN-CX-007; 86-JN-CX-009
AVAILABLE FROM Juvenile Justice Clearinghouse, Department F, P.O. Box 6000,
Rockville, MD 20850; telephone: 800-638-8736.
PUB TYPE Reports - Evaluative (142)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *At Risk Persons; *Delinquency; Disadvantaged Youth; *Drug
Use; Elementary Secondary Education; Etiology; Longitudinal
Studies; *Substance Abuse; Urban Problems; *Urban Youth;
*Violence
IDENTIFIERS Firearms; Guns

ABSTRACT

In collaborative efforts three research teams have investigated the problems of urban delinquency and substance abuse in longitudinal studies that have gone on since 1986. The Denver Youth Study is a longitudinal survey that involves annual interviews with probability samples of five different birth cohorts and their parents from areas of Denver (Colorado) that display high risk for delinquency. The Pittsburgh Youth Study, in two phases, selected boys attending grades 1, 4, and 7 in Pittsburgh (Pennsylvania) public schools. Of 2,250 initial subjects, 1,500 have been selected for followup. The Rochester Youth Development Study started with a sample of 1,000 boys and girls in Rochester (New York) and collected data on them over 4.5 years. This report updates an earlier report on these three studies, published in 1994, and supports previous conclusions. Violent offenses increased markedly with the onset of drug use, as did the carrying of concealed weapons. Continued drug use has been associated with an increase in violent offenses and the frequency of carrying weapons. The onset of drug selling for these juveniles was associated with an increase in violent crime, and the percentage of drug dealers carrying guns rose steadily for those between the ages of 16 and 19. When drug use was discontinued, violent offenses decreased. Findings are grouped into the following sections: (1) "Introduction"; (2) "Results: Delinquency and Drug Use"; (3) "Results: Overlap of Problem Behaviors"; (4) "Results: Explanatory Factors and Delinquency"; (5) "Results: Common Themes"; and (6) "Programmatic Implications." (Contains 1 table and 15 figures.) (SLD)

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OTDP Summary

rban Delinquency and Substance Abuse Initial Findings

Research Summary

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Office of Juvenile Justice and Delinquency Prevention

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) was established by the President and Congress through the Juvenile Justice and Delinquency Prevention (JJDP) Act of 1974, Public Law 93-415, as amended. Located within the Office of Justice Programs of the U.S. Department of Justice, OJJDP's goal is to provide national leadership in addressing the issues of juvenile delinquency and improving juvenile justice.

OJJDP sponsors a broad array of research, program, and training initiatives to improve the juvenile justice system as a whole, as well as to benefit individual youth-serving agencies. These initiatives are carried out by seven components within OJJDP, described below.

Research and Program Development Division develops knowledge on national trends in juvenile delinquency; supports a program for data collection and information sharing that incorporates elements of statistical and systems development; identifies how delinquency develops and the best methods for its prevention, intervention, and treatment; and analyzes practices and trends in the juvenile justice system.

Training and Technical Assistance Division provides juvenile justice training and technical assistance to Federal, State, and local governments; law enforcement, judiciary, and corrections personnel; and private agencies, educational institutions, and community organizations.

Special Emphasis Division provides discretionary funds to public and private agencies, organizations, and individuals to replicate tested approaches to delinquency prevention, treatment, and control in such pertinent areas as chronic juvenile offenders, community-based sanctions, and the disproportionate representation of minorities in the juvenile justice system.

State Relations and Assistance Division supports collaborative efforts by States to carry out the mandates of the JJDP Act by providing formula grant funds to States; furnishing technical assistance to States, local governments, and private agencies; and monitoring State compliance with the JJDP Act.

Information Dissemination and Planning Unit informs individuals and organizations of OJJDP initiatives; disseminates information on juvenile justice, delinquency prevention, and missing children; and coordinates program planning efforts within OJJDP. The unit's activities include publishing research and statistical reports, bulletins, and other documents, as well as overseeing the operations of the Juvenile Justice Clearinghouse.

Concentration of Federal Efforts Program promotes interagency cooperation and coordination among Federal agencies with responsibilities in the area of juvenile justice. The program primarily carries out this responsibility through the Coordinating Council on Juvenile Justice and Delinquency Prevention, an independent body within the executive branch that was established by Congress through the JJDP Act.

Missing and Exploited Children Program seeks to promote effective policies and procedures for addressing the problem of missing and exploited children. Established by the Missing Children's Assistance Act of 1984, the program provides funds for a variety of activities to support and coordinate a network of resources such as the National Center for Missing and Exploited Children; training and technical assistance to a network of 43 State clearinghouses, nonprofit organizations, law enforcement personnel, and attorneys; and research and demonstration programs.

OJJDP provides leadership, direction, and resources to the juvenile justice community to help prevent and control delinquency throughout the country.

Urban Delinquency and Substance Abuse

Initial Findings

Research Summary

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Second Printing
August 1995

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This report was prepared under the Program of Research on the Causes and Correlates of Juvenile Delinquency (grant numbers 86-JN-CX-006, -007, and -009), funded by the Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice.

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The Office of Juvenile Justice and Delinquency Prevention is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the National Institute of Justice, and the Office for Victims of Crime.

Foreword

In 1995, the drug-crime-drug cycle continues, as urban delinquency and substance abuse play a significant and negative role in our communities. More teenagers are smoking marijuana and fewer see the dangers of cocaine. To enable juvenile justice professionals to draw the critical distinctions between delinquency's causes and correlates, the Office of Juvenile Justice and Delinquency Prevention sponsors long-term research designed to lead to long-term solutions. With its multiple longitudinal studies, the Program of Research on the Causes and Correlates of Juvenile Delinquency presents a prime example of the potential of such research.

This Summary, one of three documents resulting from the research, was first published in March 1994 and presented initial findings regarding urban delinquency and substance abuse. Although our work continues in this research area and we expect to release an update in March 1996, the message of the original Summary still merits our attention.

- Violent offenses increased markedly with the onset of drug use, as did the carrying of concealed weapons.
- Continued drug use was associated with an increase in violent offenses and in the frequency of carrying concealed weapons.
- The onset of drug selling was associated with an increase in violent crime.
- The percentage of drug dealers carrying guns rose steadily for those between the ages of 16 and 19.
- When drug use was discontinued, violent offenses decreased.

These findings are of great significance in our efforts to reduce juvenile delinquency and violence. As our research continues on the causes and correlates of delinquency and effective prevention and intervention activities, we hope that these initial results continue to serve you well in your efforts to meet the needs of our youth, families, and communities.

Shay Bilchik

Administrator

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Introduction

Serious delinquency and drug use are major problems in American society. Casual observation of city streets and daily newspapers attests to this. Delinquency and drug use, however, are not new problems. They have plagued societies throughout history. In fact, delinquency and drug use are among the most resistant forms of problem behavior we know. Despite our best efforts, society has so far failed to make a substantial reduction in them.

That does not mean that we have not made progress. We have. Our understanding of delinquency and drug use, and of ways to prevent and treat them, has improved and continues to improve under the leadership of the Office of Juvenile Justice and Delinquency Prevention (OJJDP). OJJDP has advanced on at least two fronts in this battle. First, the agency led the way in designing and implementing action programs that provide much needed services to troubled youth. Second, OJJDP has been in the forefront of supporting basic, long-term research that provides the hard empirical information needed to design effective action programs.

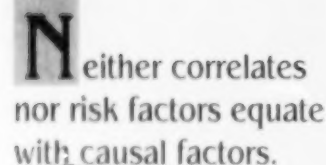
Past research indicates that many variables correlate with delinquency and that many factors tend to increase the risk of later delinquent behavior. Among these risk factors are birth trauma, child abuse and neglect, ineffective parental discipline, family disruptions, conduct disorder and hyperactivity in children, school failure, learning disabilities, negative peer influences, limited employment opportunities, inadequate housing, and residence in high-crime neighborhoods.

We also know that neither correlates nor risk factors can be equated with causal factors.

Difficulties in drawing causal inferences

Researchers have not yet been able to establish clear distinctions between causal and other factors. Neither have researchers been able to delineate the constellations of causes that are most crucial in explaining delinquency. Indeed, it is not easy to determine causality for any human behavior, especially in the natural environment, where, in contrast to laboratory science, controls are not easy to achieve. We cannot simply presume that every child who experiences a risk factor such as child abuse will automatically become delinquent; many children who experience abuse never engage in delinquent behavior. Each individual brings to a given situation unique personal characteristics that have been influenced by a host of factors in the arenas of the family, school, peer context, and community environment.

Overall, research findings support the conclusion that no single cause accounts for all delinquency and that no single pathway leads to a life of crime. To date, however, we have not clearly identified all the causal pathways that lead to delinquency or the factors that cause different individuals to take different paths. This state of affairs is due, in large part, to limitations in the methodologies previously employed and an inadequate understanding of the theoretical bases for causal relationships.



Neither correlates
nor risk factors equate
with causal factors.

To study changes in individual offending allows us to examine causal factors that may influence those changes.

Why longitudinal research is needed

Longitudinal studies, in contrast to cross-sectional studies, respond to many of the problems identified in earlier research designs. Such studies offer many opportunities to better discriminate among correlates, risk factors, and causes. There is general agreement among social scientists and policymakers that longitudinal studies are the best way to gain information on the causes of delinquency. This type of investigation involves repeated contacts with the same individuals so that patterns of development can be studied. In particular, the study of changes in individual offending allows us to examine potential causal factors that may influence those changes.

The strength of the longitudinal investigation is that it permits researchers to sort out which factors precede changes in offending, to predict such changes, and to do so independent of other factors. With the aid of repeated measures, it is possible to identify pathways to delinquency, each with unique causal factors that, like delinquency itself, may change over time. Successfully accomplishing this will provide the information needed to develop truly effective intervention programs.

Current program of research

The most recent example of OJJDP's support for long-term research is its Program of Research on the Causes and Correlates of Juvenile Delinquency. Three research teams were competitively selected to participate in this program, launched in fall 1986. The teams are located at the State University of New York (SUNY) at Albany, the University of Colorado, and the University of Pittsburgh, with study sites in Rochester, New York; Denver, Colorado; and Pittsburgh, Pennsylvania, respectively.

The research teams collaborated extensively in designing the studies, identifying key theoretical concepts, and developing "core" measures for these concepts. The culmination of this effort is the use of a body of common measurements in the surveys of the three projects. The following are examples of content areas addressed in the core measures:

- Official and self-reports of delinquent behavior.
- Self-reports of drug use.
- Characteristics of the community and neighborhood.
- Demographic characteristics of the family.
- Parental attitudes and child-rearing practices.
- Youth/child attitudes, school performance, and perceived consequences of delinquency.
- Peer delinquency and conventional activities.

We believe that these collaborative efforts represent a milestone in criminological research because they constitute the largest shared-measurement approach ever achieved in delinquency research. This research will enable us to aggregate data across projects and also to replicate findings across sites, thus ensuring that

findings apply in more than one specific site. In addition to the common measures, each project also collects unique measurements that are expected to add special yields to the findings from each site.

Study designs and samples

Denver Youth Survey. This longitudinal survey involves annual interviews with a probability sample of five different birth cohorts and their parents selected from areas of Denver that display high risk for delinquency. They include both boys and girls who were 7, 9, 11, 13, and 15 years old when the study began. During the course of the study, these birth cohorts will permit an examination of developmental sequences across the full age span from 7 to 19. Including the younger cohorts (ages 7 and 9) should facilitate assessment of the developmental outcome of early problem behavior on later delinquency.

The sampling procedure is also designed to ensure enough serious, chronic offenders for an analysis of their development and, at the same time, provide

OJJDP provided each project a unique opportunity to secure additional funding for specialized studies.

Related projects

Because of the scope and design of the research program, OJJDP provided each of the projects with a unique opportunity to secure additional funding for specialized studies. Currently, the following special projects have been added:

Denver Youth Survey

"Children, Youth and Drugs," National Institute on Drug Abuse.

"The Denver Neighborhood," The John D. and Catherine T. MacArthur Foundation.

Pittsburgh Youth Study

"Neuropsychology, Behavior Disorder, and Delinquency," National Institute of Mental Health.

"Attention Deficits, School Dysfunction, and Lead Exposure," Centers for Disease Control and Prevention.

"Risk, Development, and Outcome of Disruptive Behavior," National Institute of Mental Health.

Rochester Youth Development Study

"A Social Network Approach to Drug Use of Minority Youth," National Institute on Drug Abuse.

"The Inclusion of Parent Interviews in the Rochester Youth Development Study," National Science Foundation.

"Examining Delinquency and Drug Use During Later Adolescence," National Science Foundation.

To maximize the number of serious, chronic offenders, the sample includes more youth from high-crime areas.

control data on normal developmental patterns. From a random selection of more than 20,000 households within high-risk neighborhoods, risk was determined by a social ecology analysis that identified areas with housing and population characteristics associated with delinquency and by official crime rates. Survey respondents are all eligible children and parents in families living in the sampled households.

Pittsburgh Youth Study. The survey selected, in two phases, boys attending grades 1, 4, and 7 in Pittsburgh schools. About 83 percent to 85 percent of the families contacted agreed to participate. Cohort 1 acquired about 750 subjects during the spring of 1987, and cohort 2 acquired the remainder, another 1,800, during the spring of 1988.

Of the 2,550 subjects, a screening procedure selected 1,500 for followup. Half of the 1,500 are considered high risk while the other half are lower risk. The first followup of the earliest acquired subjects occurred in fall 1987; subsequent followups continued at regular intervals until fall 1992. These followups involved the subjects, their teachers, and parents (one parent per subject).

Because at the beginning, the three groups of boys were in the first, fourth, and seventh grades, the completed study will have covered the age range from 6 to 18 years, in which most of the onset of delinquent activity is likely.

Rochester Youth Development Study. The Rochester Youth Development Study started with a sample of 1,000 boys and girls in the seventh and eighth grades of the Rochester public schools. To maximize the number of serious, chronic offenders available for the study, the sample includes more youth from high-crime areas and fewer from low-crime areas. The entire range of seventh and eighth grade students, however, is represented.

At 6-month intervals, a survey staff member interviewed one of the student's parents, most typically the mother, in the home, and interviewed the student in a private space in the school. Over a 4 1/2-year period, this provided nine data collection points. If the family moved or if the child left school, they remained in the study and continued to be interviewed. Each interview lasted approximately 1 hour. In addition, data were collected from a variety of Rochester agencies including the schools, the police, the courts, and social services. Overall, this provided quite a thorough picture of adolescent development during the junior and senior high school years.

Anticipated outcomes

This research program is a unique collaborative effort to create new knowledge about individual offending and the causes of changes in offending. Each study examines factors operating prior to the major onset of delinquent activity, and each is likely to document predictive factors that can help identify youth most likely to become delinquent. The studies also document individuals' development of offending as evident from self-reports and official records. Delinquency is examined here as part of a broader context of nonconforming behavior—drug use, school failure, and the like—that requires simultaneous attention. This is especially important if these behaviors are mutually reinforcing. A close study

of delinquency and other nonconforming behaviors will help to document whether a single path or multiple paths exist toward different serious delinquent and antisocial outcomes.

Another major contribution of the studies will be identification of causal factors of offending. The studies will clarify the sequence of causal factors and changes in them that influence offending in different periods of youngsters' lives. The three studies all include both youngsters exposed to known risk factors for delinquency and youngsters who can serve as controls. Thus the studies can better help to distinguish between correlates, risk factors, and causal factors. At the same time, the studies will examine which causal factors are mostly associated with the initiation of delinquency, its maintenance, and later, its desistance. The common measures among the studies will permit multiple replications of the findings, thereby enhancing the scientific yield of the research program.

A major expected outcome is a better understanding about preventive, therapeutic, and juvenile justice-system interventions. Interventions may occur at different points along the developmental paths toward delinquency, each with different targets for modification. That in itself will be an advance over current interventions, which usually lack a solid empirical knowledge about the nature of delinquency and its causes. The three studies will provide an empirical foundation, creating new knowledge about the causes of delinquency, and therefore pave the way for a new generation of preventive, judicial, and therapeutic interventions.

Scope of report

This report—the *Initial Findings*—is one of three interrelated reports submitted to OJJDP under the Program of Research on the Causes and Correlates of Juvenile Delinquency. The second is called the *Technical Report* and the third is a set of *Technical Appendices*. These reports provide initial findings and provide a start toward the future outcomes just described.

The *Technical Report* provides a full description of the Program of Research and its three projects. It also describes the full design and methodology of the projects. Its major purpose is to present in detail the initial empirical results that form the basis for this summary report. In contrast, these *Initial Findings* briefly present only selected findings. Readers interested in more indepth information are referred to the *Technical Report*. A useful place to start would be its first two chapters, which describe the Program of Research and the projects, and the summary (chapter 19). All chapter numbers used in this report refer to chapters in the *Technical Report*. The summary provides a comprehensive recapitulation of the findings and implications from each other chapter. It also discusses common themes that cut across the individual chapters.

Methodological issues

A full discussion of the research methods appears in chapter 2. A few general issues are discussed here.

Current interventions usually lack solid empirical knowledge about the nature of delinquency and its causes.

All the results are correctly weighted to represent the general age-grade populations.

Each of the three projects of the Program of Research is longitudinal in design. That means that each study selected a sample of youngsters and is following them over time. This report uses information from the first 3 years of data collection. The purpose was to chart the social and psychological development of these youngsters and then to relate that to the development of delinquency and drug use.

Each study selected a large number of youngsters to study. In Denver there are 1,500 subjects divided equally among boys and girls. At the beginning of the study they were divided equally among ages 7, 9, 11, 13, and 15. In Pittsburgh there are 1,500 boys divided equally among first, fourth, and seventh graders at Year 1. In Rochester there are 1,000 subjects; 75 percent are boys and 25 percent are girls. They were divided equally among seventh and eighth graders at Year 1.

In order to obtain enough serious, chronic offenders for research, each study oversampled youngsters at high risk for serious delinquency and drug use. All the results reported here are correctly weighted to represent the general age-grade populations in major segments of the three cities. For Rochester, the results are representative of the whole city; for Pittsburgh, results are representative of certain high- and low-risk areas, for Denver, the results are representative of only certain high-risk areas.

The projects collect comprehensive information on each of the subjects. Most of the information comes from face-to-face interviews conducted with each youngster and his or her primary caretaker—usually the mother. In Denver the interviews are conducted annually and in Pittsburgh and Rochester, semiannually. For this report the Pittsburgh and Rochester data have been combined into annual periods and the results cover the first 3 years of data collection. All three studies had excellent retention of subjects over this time period—90 percent or better.

Although many measures of delinquency and drug use are available in these studies, we concentrate on two summary scales in this report. Delinquency is usually measured by Street Crimes—an index that includes 13 serious forms of delinquency that are currently of great concern and which have been shown in prior research to be of greater seriousness in the view of the public at large. Street crimes include offenses such as robbery, major theft, gang fights, and the like, as listed in table 1. Drug use is usually measured by an index that combines the use of marijuana and eight "harder" drugs. Different versions of these scales are used for the child (ages 6–10) and youth respondents (ages 11–17). The content of the child delinquency measures is similar to the content of the youth scales; they may perhaps be viewed as precursors to later behaviors. Only alcohol and marijuana use are included in the child drug use measure. Other delinquency measures used in this report are "Other Serious Crimes" that include offenses often considered serious but not with the same concern as Street Offenses, and a Minor Offense measure that involves behaviors considered even less serious. (The specific items in these scales can be found in chapter 3 of the *Technical Report*.)

Table 1: Measures of Street Crime and Drug/Alcohol Abuse

Street Delinquency Offenses	Alcohol and Drug Use
Youth measure 1. Theft, \$50 to \$100 2. Theft, over \$100 3. Theft, motor vehicle 4. Burglary 5. Aggravated assault 6. Robbery 7. Rape 8. Gang fighting 9. Purse snatching/pickpocketing 10. Theft from an automobile 11. Sold marijuana 12. Sold hard drugs 13. Fencing (selling, buying stolen goods)	Alcohol use 1. Drank beer 2. Drank wine 3. Drank hard liquor Marijuana use 1. Used marijuana or hashish Other drug use 1. Used tranquilizers 2. Used barbiturates 3. Used amphetamines 4. Used hallucinogens 5. Used cocaine (other than crack) 6. Used crack 7. Used heroin 8. Used angel dust or PCP
Child measure 1. Theft of bicycle or skateboard 2. Theft from school 3. Burglary 4. Theft from an automobile 5. Hit an adult at school 6. Physical fights with other kids 7. Purse snatching/pickpocketing	

About a quarter of the older males but only about a tenth of the older females report committing street offenses.

Results: delinquency and drug use

This section presents descriptive data about the extent of delinquency and drug use in the three studies. It also discusses other forms of problem behaviors that are associated with delinquency and drug use.

Self-reported delinquency and drug use

The three projects use identical items to measure self-reported rates of delinquency and drug use. The results are reported in chapter 3 of the *Technical Report*.

Figure 1 presents the prevalence rate, or the percentage of subjects who commit street crimes, in each city. Data on "youth" samples refer to older subjects, from 11 to 17 years of age, while data on "child" samples refer to younger subjects, from 6 to 10 years of age.

Within age and gender categories there is a very high degree of similarity in these prevalence rates across cities. As expected, males report more involvement in street crimes than females. About one-quarter of the older males but only about one-tenth of the older females report committing street offenses. Older subjects report more involvement than younger subjects. Indeed, the rate of street offending continues to increase up to the age of 17 (see figure 2).

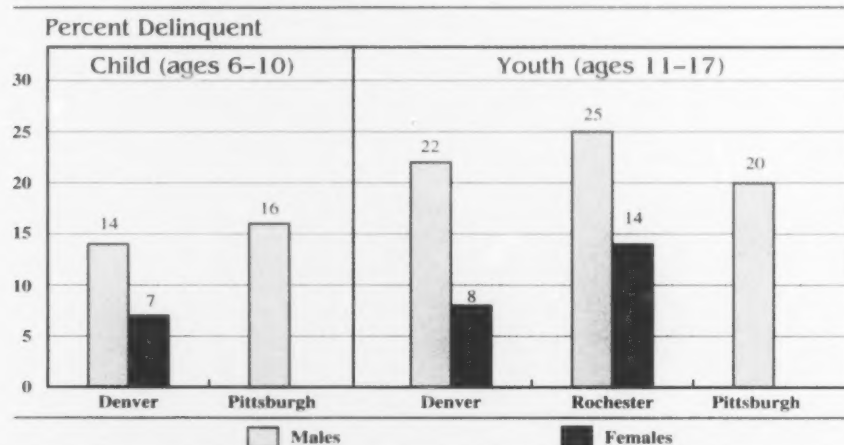
About 15 percent of the youngest boys in Denver and Pittsburgh report some involvement in street crimes. The rate of involvement in these serious forms of

Racial differences become more pronounced as seriousness of offending increases.

delinquency by the youngest subjects indicates a very early age of initiation of these behaviors. By age 7, one-tenth of the boys report having committed at least one of these street offenses.

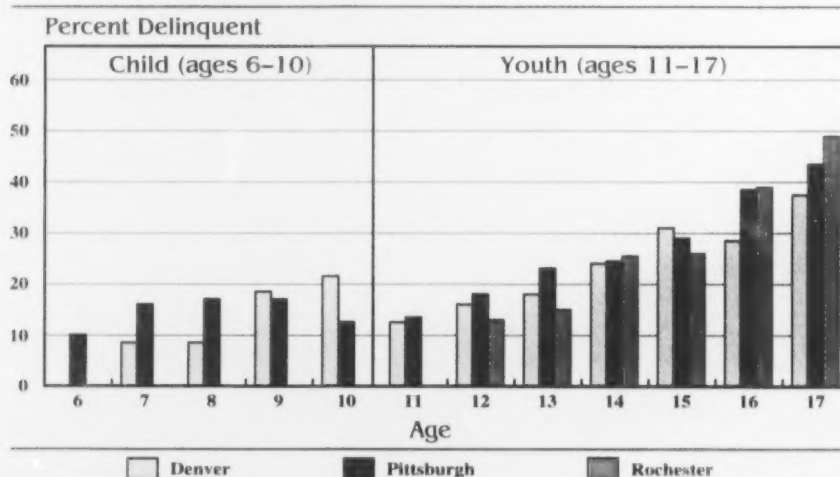
Although there is some inconsistency across sites in the rank order of prevalence rates by race, it does appear that racial differences become more pronounced as seriousness of offending increases. As illustrated in figure 3, whites generally have a lower prevalence rate of street offenses than other groups. It should be noted that because other variables such as social class are not controlled in these analyses, explanation of racial differences may not depend

Figure 1: Prevalence Rates for Street Crimes by Age Group and Gender



Note: Pittsburgh sample includes only males. Rochester sample includes only youth (ages 11-17).

Figure 2: Annual Prevalence Rates for Street Crimes by Age, for Males



Note: Rochester sample includes only youth (ages 11-17).

on race. Instead they may be simply indicators of other social processes and conditions.

Rates of drug use are also quite high. Alcohol use begins early and by age 16, half of the boys and girls use alcohol regularly. Marijuana use begins later and fewer youth use this drug; about one-quarter of the subjects use marijuana at age 16. Use of other drugs begins even later and prevalence rates never exceed 10 percent. Although use of marijuana and other drugs is of concern, clearly alcohol remains the "drug of choice" among American adolescents, and greater attention to the abuse of alcohol seems needed.

Alcohol remains the "drug of choice" among American adolescents.

Arrest Data

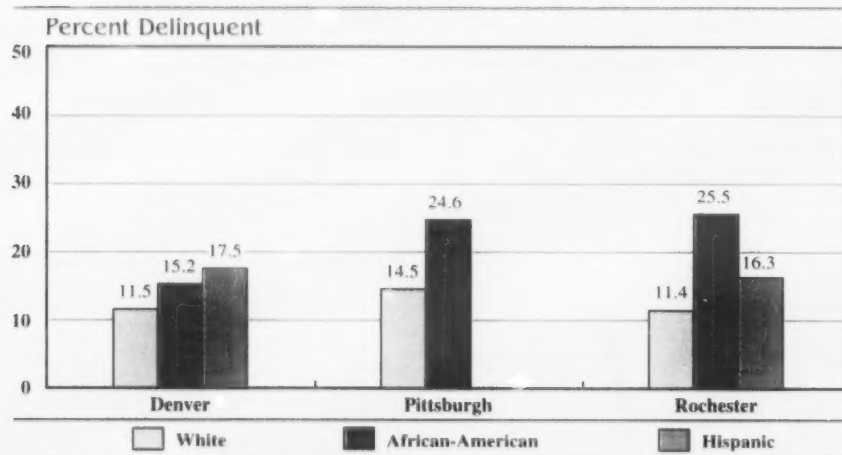
In addition to self-reported data, the projects also collect information about arrests and contacts with the juvenile justice system. Chapter 4 examines this issue with data from Denver and Rochester.

Being arrested in urban areas, especially for males, is relatively common. For example, among the 17-year-olds in Denver, 41 percent report having been arrested at least once. In general, the probability of being arrested increases with age (see figure 4).

A greater percentage of males (19 percent in Denver and 31 percent in Rochester) are arrested than females (10 percent in Denver and 22 percent in Rochester). In Denver, where self-reports of arrests are used, there are no racial/ethnic differences, but in Rochester, where official data are used, African-Americans have higher rates of arrest than whites or Hispanics.

In general, there is a reasonable overlap between self-reported delinquency and arrest rates. Most of those who are arrested are classified as being either street offenders or "other serious" offenders (figure 5). Even though those arrested

Figure 3: Annual Prevalence Rates of Delinquency by Race for Youth, Time 2



Even though those arrested seem to be relatively serious offenders, the charges on which they are arrested are often quite minor.

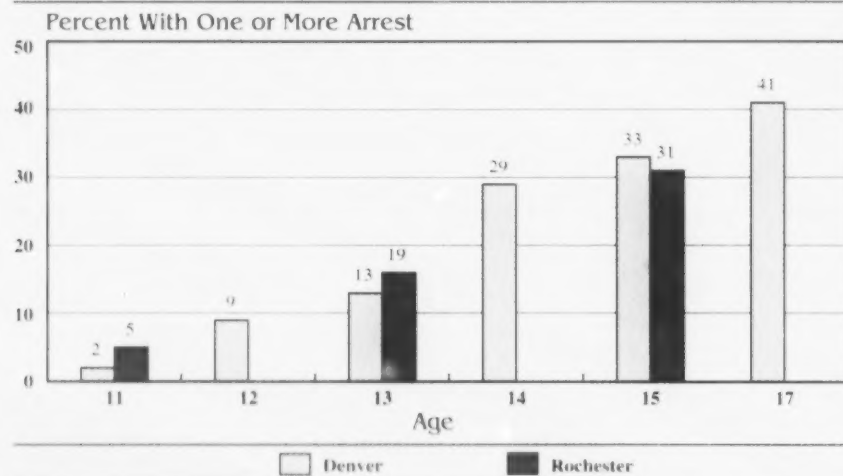
seem to be relatively serious offenders, the charges on which they are arrested are often quite minor.

A large number of serious and street offenders are not arrested during years in which they report being active offenders. As a result, an emphasis on both prevention and treatment programs appears needed.

Results: overlap of problem behaviors

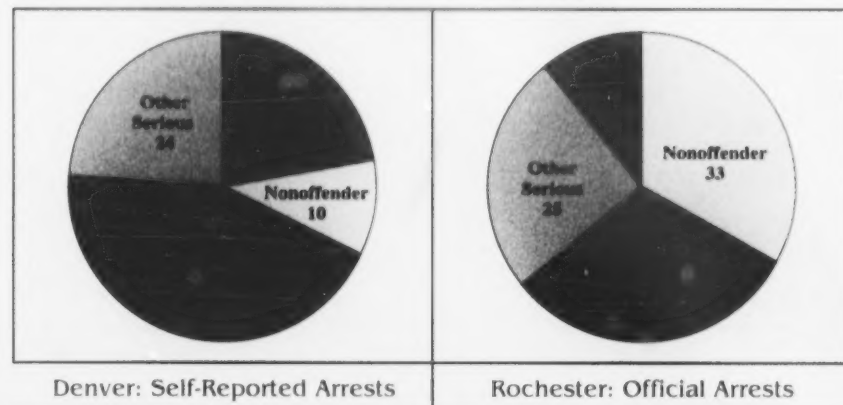
The next set of issues concerns the overlap or co-occurrence of problem behaviors. They are discussed in chapters 5 to 7 of the *Technical Report*.

Figure 4: Arrest Rates by Age



Note: Data for age 16 unavailable.

Figure 5: Arrest Rates by Delinquency Type



Delinquency and substance use

Substance use and involvement in delinquent behavior are clearly interrelated. They are the major dependent variables in this research, and they clearly overlap. The more serious the youth's involvement in drug use, the more serious is his or her involvement in delinquency, and vice versa. This is observed across age, gender, and ethnic groups.

When the substance use/delinquency relationship is examined over time, prior changes in substance use are found to have a larger impact on subsequent changes in delinquency, while prior changes in delinquency have a somewhat smaller impact on subsequent drug use. Thus, over time, it seems that substance use stimulates more changes in delinquency than the reverse.

Sexual activity and delinquency

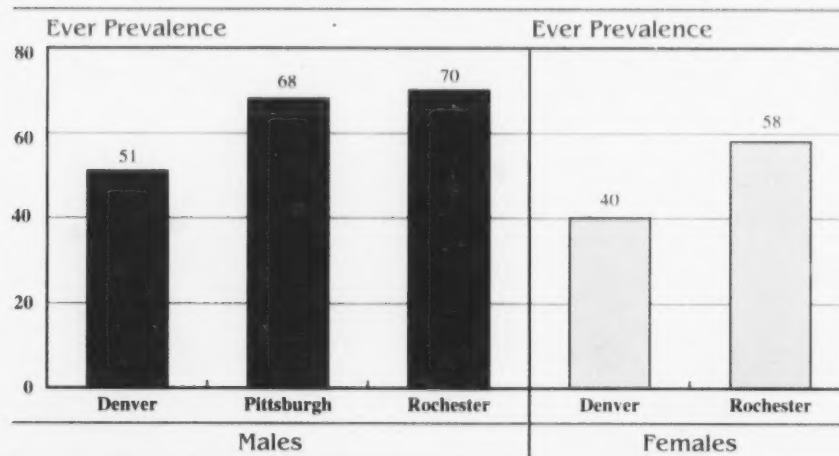
These subjects report a high rate of sexual activity and pregnancy. Figure 6 shows that for the older subjects (13 to 17 years), well over half of the boys and almost half of the girls have engaged in sexual intercourse. In the most recent year, most of them were sexually active.

Teenage pregnancy is quite common. Almost half of the oldest girls in Denver and a third in Rochester have been pregnant at least once.

Precocious sexual activity relates strongly to both delinquency and drug use. Youth who are sexually active or who become pregnant are much more likely to be involved in some form of delinquency and more likely to use alcohol or other drugs. Girls who have been pregnant report substantially higher rates of alcohol and drug use, which may provide concern for the children of these young mothers.

Substance use stimulates more changes in delinquency than the reverse.

Figure 6: Ever Prevalence of Sexual Intercourse for Subjects Ages 13 to 17



Note: Pittsburgh data not available for females.

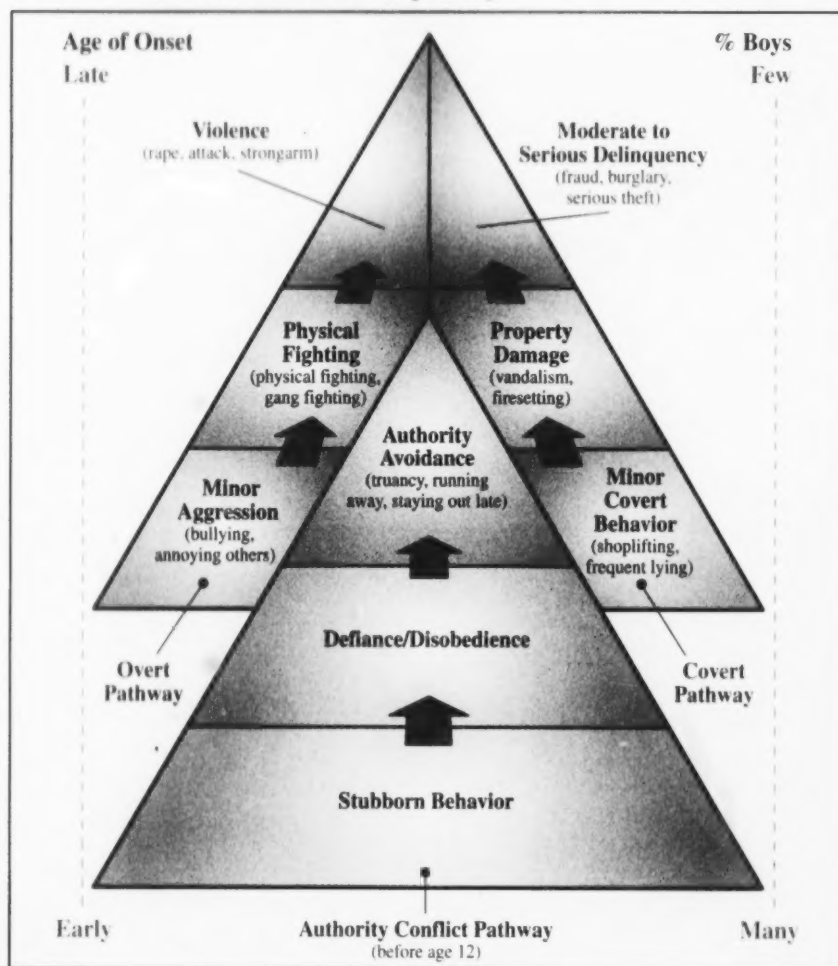
Starting at relatively early ages, boys exhibited the onset of stubborn behavior.

Developmental pathways

While many youth experience many problem behaviors, the development of these problems tends to occur in an orderly progression. Chapter 7 examines this issue. Both retrospective and prospective tracings in the middle and the oldest samples of the Pittsburgh Youth Study revealed developmental sequences in disruptive behavior from childhood to adolescence. Figure 7 shows the age at which a variety of problem behaviors begin for boys in the oldest sample. It also depicts the relative percentage of boys involved in different behavioral pathways.

Starting at relatively early ages, boys exhibited the onset of stubborn behavior (median age 9) and minor covert acts, such as frequent lying and shoplifting (median age 10). This tends to be followed, around ages 11 and 12, by defiance, minor aggression (annoying others and bullying), and property damage

Figure 7: Three Pathways to Boys' Problem Behavior and Delinquency



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(firesetting, vandalism). After that, more serious forms of delinquency were likely to begin, but also physical fighting and authority avoidance (truancy, staying out late at night, running away).

Analyses indicated that three developmental pathways could be distinguished, each with three successive steps (Figure 7): (a) an early Authority Conflict Pathway prior to age 12, starting with stubborn behavior, followed by defiance, and subsequently followed by authority avoidance; (b) a Covert Pathway, starting with minor covert behaviors, followed by property damage, and subsequently followed by moderate to serious forms of delinquency; and (c) an Overt Pathway, starting with minor aggression, followed by fighting, and subsequently followed by violence.

Boys can progress to different positions on a pathway. Most reach only the first step of a pathway, fewer reach the second step, and even fewer reach the last step. Most boys, entering a pathway, did so at the first step in a pathway, fewer entered at the second step, and fewest entered at the last step. Most of those who reached the third step had gone through the preceding steps earlier in life in the order specified in the pathway model.

Some boys were in a single pathway, while others were in multiple pathways. Those boys who escalated in the Overt Pathway were more likely to escalate in the Covert Pathway, compared to boys escalating in the Covert Pathway showing an escalation in the Overt Pathway. Thus, boys' engagement in aggressive behaviors appeared to stimulate their engagement in covert delinquent acts more than the reverse. Escalation in the Authority Conflict Pathways was not associated with escalation in either the Overt or the Covert Pathways.

Boys' rate of self-reported delinquency was highest for those in triple pathways (Covert, Overt, and Authority Conflict) or in certain dual pathways (Covert and Overt; Covert and Authority Conflict). However, by age 16, those in the triple pathways displayed the highest rate of offending. The rate of violent offenses was also highest for those in the triple pathways and for those in the Overt and Covert Pathways. Results based on court petitions largely supported these findings. Lowest rates of offending were observed for boys in the Overt and Authority Conflict Pathways.

Results: explanatory factors and delinquency

The remaining topics in this report concern the relationship between a variety of explanatory factors and the prevalence of delinquency and drug use. These topics are discussed in chapters 8 through 18 of the *Technical Report*.

Families and delinquency

Two types of family effects are examined. The first concerns family attachment, the emotional bond between parent and child. The second concerns various

Boys' engagement in aggressive behaviors appeared to stimulate their engagement in covert delinquent acts.

Greater risk exists for violent offending when a child is physically abused or neglected early in life.

forms of parenting behavior, especially parent communication and supervision, and conflict between parents and their children.

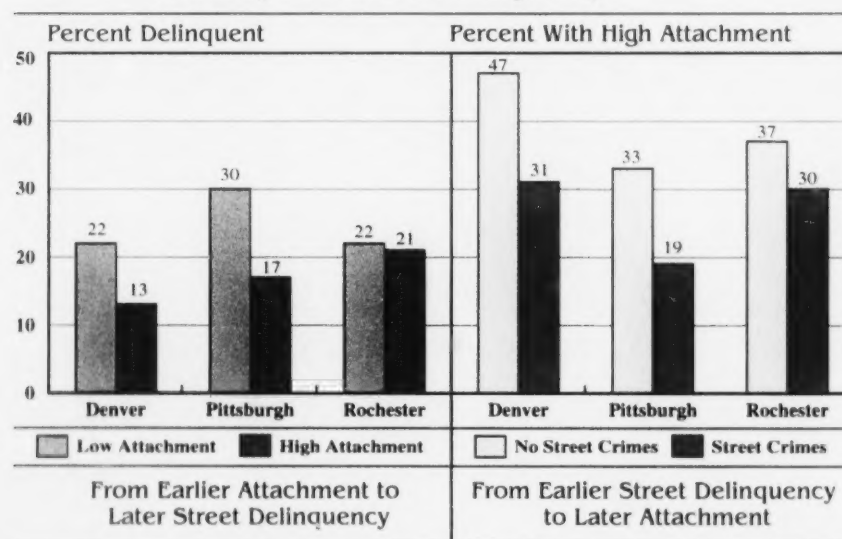
Poor family attachment relates to both delinquency and drug use. That is, youth who do not feel a strong emotional bond with their parents are more likely to commit street crimes and to use drugs.

Poor parenting behavior—failure to communicate with and monitor children—relates to both delinquency and drug use. Parental conflicts—inconsistency of punishment and avoidance of discipline—relate only to delinquency.

All of these interrelationships are examined over time. Prior poor levels of family attachment and poor parenting behaviors associate with subsequent higher levels of delinquency and drug use. Prior high levels of delinquency and drug use also associate with subsequent poor levels of family attachment and poor parenting behaviors. Figure 8 shows these reciprocal relationships, using data about family attachment and street delinquency. It seems that poor family life makes delinquency worse and high delinquency makes family life worse.

None of the relationships involving the family factors and delinquency/drug use are particularly strong, however. Indeed, the overall impact of family effects, at least as measured in the Program of Research, appears somewhat weak. A link has been found to exist between childhood victimization and delinquent behavior. Greater risk exists for violent offending when a child is physically abused or neglected early in life. Such a child is more likely to begin violent offending earlier and to be more involved in such offending than children who have not been abused or neglected.

Figure 8: Mutual Relationships Between Attachment to Family and Street Delinquency



Education and delinquency

Two educational factors relate to delinquency and drug use. One concerns the youth's commitment to school, and the other, analyzed in Pittsburgh, concerns reading achievement.

Commitment to school and both delinquency and drug use mutually reinforce each other over time. Figure 9 illustrates this for street crimes. Youngsters who are not highly committed to school at Year 1 have higher rates of street crimes at Year 2. Also, youngsters who commit street crimes at Year 1 tend to have reduced levels of commitment to school at Year 2.

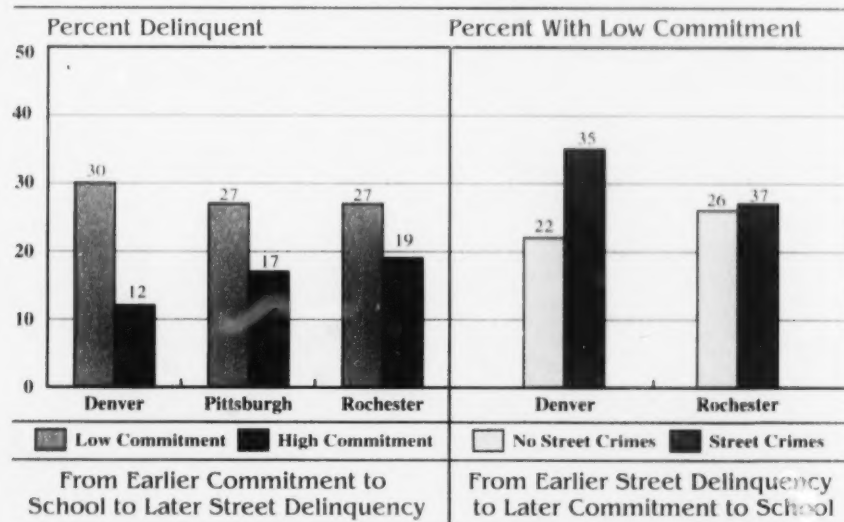
Both school performance, whether measured by reading achievement or teacher-rated reading performance, and retention in grade (i.e., being held back) relate to delinquency. Figure 10 illustrates the relationship for reading achievement and delinquency. The relationship between reading performance and delinquency appears even for first graders. Likewise, retention in grade associates with delinquency even for first graders. Delinquency is more likely for African-American males than for white males after adjusting for the effect of performance level and retention.

Neighborhoods and delinquency

Data from Pittsburgh demonstrate the relationship between living in underclass neighborhoods and delinquency. Youngsters who live in underclass areas have higher rates of delinquency than do youngsters living elsewhere. The social class of the area explains some of the ethnic differences often observed in delinquency. African-Americans living in nonunderclass areas did not have higher

The relationship between reading performance and delinquency appears even for first graders.

Figure 9: Mutual Relationships Between Commitment to School and Street Delinquency



Note: Pittsburgh data not available for analysis in "From Earlier Street Delinquency to Later Commitment to School."

Those who remain in gangs over time have exceptionally high rates of delinquency.

rates of delinquency than whites living in nonunderclass areas, despite the fact that nonunderclass neighborhood African-Americans still live in areas that compare poorly to the areas in which whites live.

Moreover, if one considers only youth who are more closely supervised by their parents and more involved with their families, youth from underclass neighborhoods are still more delinquent than youth from nonunderclass neighborhoods. Living in underclass areas itself seems to increase the chances of delinquency, even when holding other factors constant.

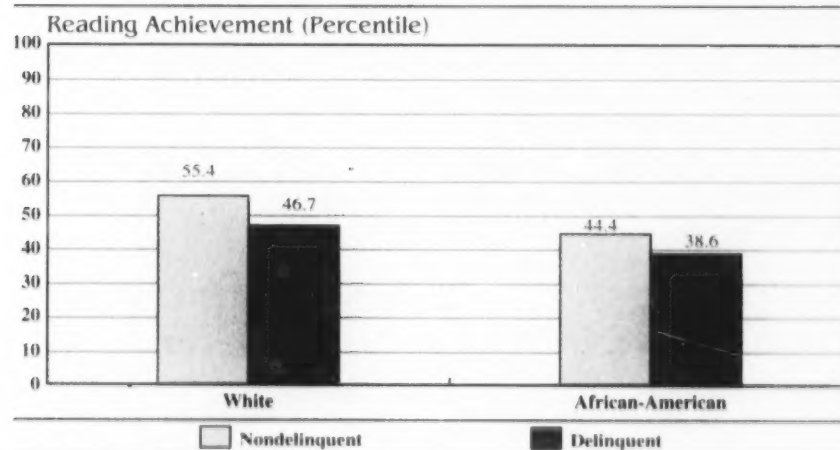
Peers and delinquency

Two different impacts explain the role of peer influences on delinquency and drug use: the impact of associating with peers who are delinquent and peers who use drugs and, second, the impact of gang membership.

Associating with peers who are delinquent, who use drugs, or both relates strongly with both delinquency and drug use. Moreover, these variables interrelate mutually over time. Figure 11 illustrates this by looking at drug use. Youth who associate with peers who use drugs at Year 2 have much higher rates of drug use at Year 3. Also, youth who use drugs at Year 2 are more likely to associate with drug-using peers at Year 3. Figure 11 shows these relationships are quite strong.

Being a member of a delinquent gang also relates strongly to delinquency and drug use. Looking at gang membership over time reveals two important findings. First, at these ages gang membership is quite fluid, and few subjects join and remain in gangs for long periods of time. Yet those who remain in gangs over time have exceptionally high rates of delinquency. Figure 12 depicts this for street crimes and other serious offenses. Of the most stable members, 64 percent commit street crimes and 88 percent commit other serious offenses.

Figure 10: Relationship Between Reading Achievement and Delinquency for White and African-American Males



Note: Pittsburgh data only.

Second, the rate of delinquency of gang members, *during the time they are members of a gang*, is quite high. For example, in the Denver Youth Survey, of the youth who were gang members only during Year 2, the proportion who committed street offenses in Year 1 is 39 percent and in Year 3 it is 47 percent. But in Year 2, when they were gang members, it is 73 percent. This finding occurs in other years and is also found in Rochester.

The rate of delinquency of gang members is quite high.

Figure 11: Mutual Relationships Between Peer Drug Use and Subject's Drug Use

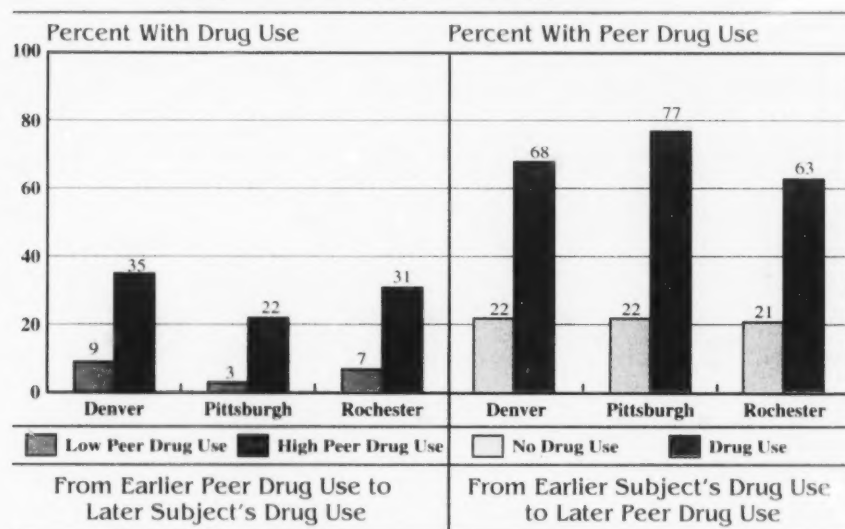
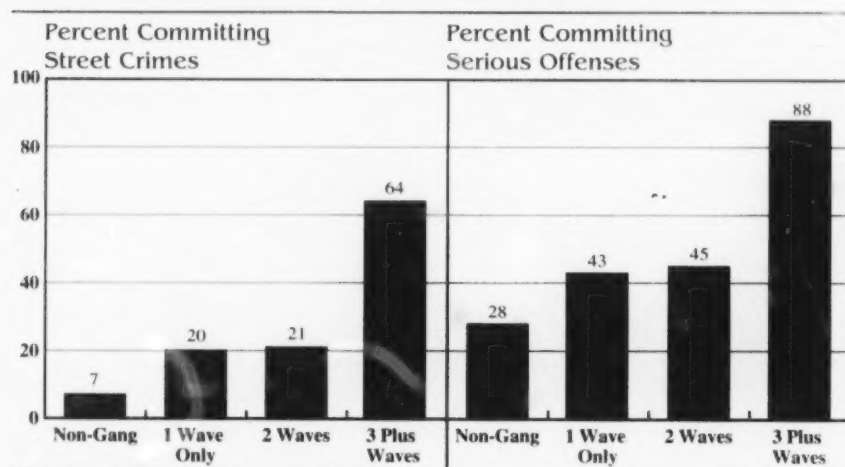


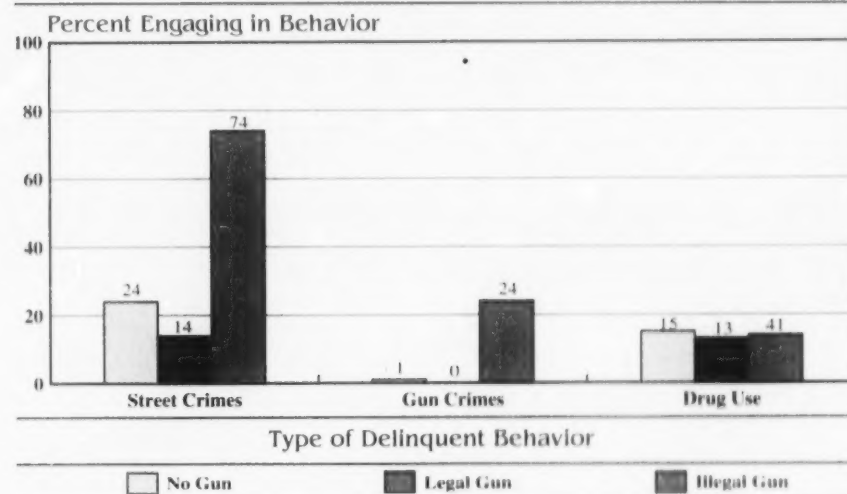
Figure 12: Relationship Between Stability of Gang Membership and Delinquency



Notes: Rochester data only.
Wave refers to data collection intervals.

By the ninth and tenth grades, more boys own illegal guns than own legal guns.

Figure 13: Relationship Between Type of Gun Owned and Percent Committing Street, Gun, and Drug Crimes



Note: Rochester data only.

Gun ownership and delinquency

Adolescent ownership and use of firearms is a growing concern, and results from the Rochester study suggest the concern is well founded.

By the ninth and tenth grades, more boys own illegal guns (7 percent) than own legal guns (3 percent). Of the boys who own illegal guns, about half of the whites and African-Americans and nearly 90 percent of the Hispanics carry them on a regular basis.

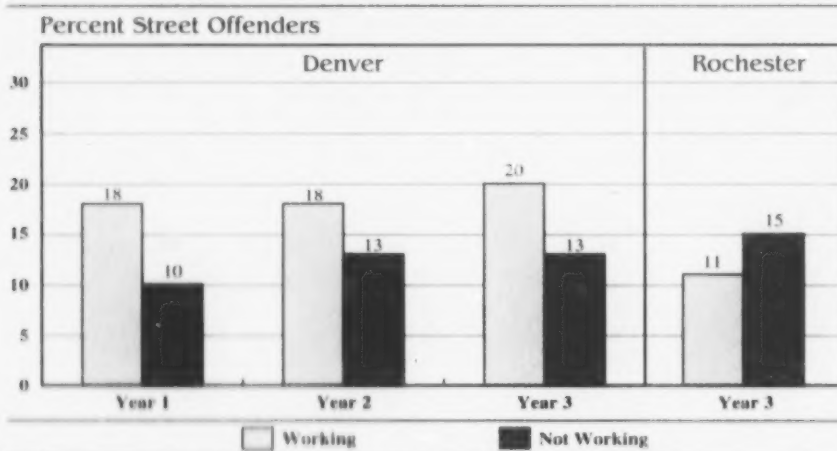
Figure 13 shows a very strong relationship between owning illegal guns and delinquency and drug use. Seventy-four percent of the illegal gunowners commit street crimes, 24 percent commit gun crimes, and 41 percent use drugs. Boys who own legal firearms, however, have much lower rates of delinquency and drug use and are even slightly less delinquent than nonowners of guns.

The socialization into gun ownership is also vastly different for legal and illegal gunowners. Those who own legal guns have fathers who own guns for sport and hunting. On the other hand, those who own illegal guns have friends who own illegal guns and are far more likely to be gang members. For legal gunowners, socialization appears to take place in the family; for illegal gunowners, it appears to take place "on the street."

Youth employment and delinquency

American society often views employment as a solution to social problems such as delinquency and drug use. Belief is widespread that work or employment programs protect us against delinquency and gangs. Unfortunately, the faith placed in youth employment is not generally supported by empirical findings

Figure 14: Percent of Workers and Nonworkers Who Are Street Offenders



over the last several decades. The relationship between lack of employment and crime or drug use found among adults does not seem to hold for adolescents. Studies in the United States that have examined adolescent employment, delinquency, and drug use in general population samples find that working youth have levels of delinquency and drug use equal to or higher than their nonworking counterparts, and the conclusion of most evaluations of work programs is that the programs have had at best no effect on the delinquent behavior of targeted youth (chapter 16).

Results from Denver and Rochester are consistent with these earlier findings. As illustrated in figure 14, a somewhat larger percentage of youths in Denver who are working are involved in street crimes; in Rochester, the groups are not significantly different from one another. A similar finding holds for drug use. There is no evidence that working is associated with lower levels of delinquency or drug use. Given the overall history of findings, a cautionary note to the belief in the efficacy of work or employment programs as delinquency prevention seems needed.

Help-seeking behaviors

Denver and Pittsburgh findings examine the extent to which parents seek help for the disruptive and delinquent behaviors of their children (chapter 17). That chapter also examines the relationship between help-seeking and delinquency.

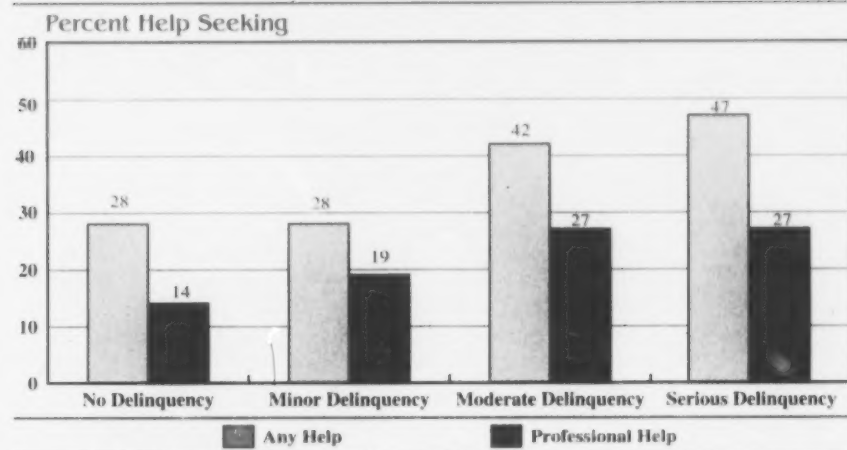
One-third of the caretakers seek some external help for the mental health and problem behaviors of their children. In Pittsburgh, one-fifth seek help from a mental health professional. In both Denver and Pittsburgh, the two most frequently used sources of help are schools and professional counselors.

Figure 15 shows, for Pittsburgh, that help-seeking increases as the level of delinquency increases. For the caretakers of the most seriously delinquent boys,

There is no evidence that working is associated with lower levels of delinquency or drug use.

Youth at risk who have more conventional lifestyles at home, at school, and with friends appear much better able to avoid the negative consequences of high-risk, high-crime neighborhoods.

Figure 15: Ever Prevalence of Help-Seeking by Delinquency Classification



Note: Pittsburgh data, oldest sample.

almost half have sought some help and almost 30 percent have sought professional help.

Despite these high rates of help seeking, no help was sought for a fairly large proportion of boys exhibiting problem behaviors and delinquency. Indeed, no help was sought for over half of all the delinquent boys in Pittsburgh.

Unfortunately, neither the Denver nor the Pittsburgh study find that help seeking had much of an effect on reducing subsequent delinquency and drug use. These findings should not be interpreted to mean "nothing works." They only suggest that general help seeking, usually with only a few visits to the help provider, does not have a strong impact on later delinquency.

Resilient youth

While many adolescents are at high risk for delinquency, not all of them actually become delinquent. Some of them—resilient youth—manage to avoid the risk. The final analytic chapter dealt with this topic by attempting to identify factors that buffer or protect adolescents from risky environments.

Among the family factors, parental supervision, attachment to parents, and consistency of discipline appear to be the most important. Commitment to school and especially avoidance of delinquent and drug-using peers also appear to be major protective factors. In sum, youth at risk who have more conventional lifestyles at home, at school, and with friends appear much better able to avoid the negative consequences of residing in high-risk, high-crime neighborhoods.

Results: common themes

The previous section presented the basic findings on a topic-by-topic basis. This section discusses common themes that cut across the empirical results presented earlier.

Replicability of results

One of the unique features of the Program of Research on the Causes and Correlates of Juvenile Delinquency is its ability to replicate findings through the use of core measures in three different research settings. Results reported here indicate that this feature is well worthwhile.

Virtually all of the collaborative results reported here replicate across projects. This includes descriptive data as well as analytic relationships. It includes results for simple and sophisticated analytic techniques, for stronger and for weaker relationships, for cross-sectional and longitudinal relationships, and so on. In sum, across a wide array of topic areas, the findings of the research program suggest a very consistent set of factors linked to delinquency and substance use. We are confident that such replicability will also be evident in future data waves when more youth are passing through high-risk periods of delinquency and substance use.

Early onset of behaviors

Delinquency and drug use are typically thought of as adolescent problems. Nevertheless, this report has clearly demonstrated the very early age at which youth experience the onset of delinquency, drug use, and many other problem behaviors. For many children, these behaviors are quite evident before the teenage years begin. Also, as other research has shown, an early compared to a later onset is related to more serious and extensive delinquent and drug-using careers.

Co-occurrence of problem behaviors

One of the strongest and most consistent findings reported here concerns the co-occurrence of problem behaviors. Delinquency and drug use relate to each other, with drug use stimulating delinquency more than the reverse. In addition, as compared with nondelinquents, delinquents and drug users are more apt to be arrested, to engage in precocious sexual behavior, to have reading problems, to exhibit oppositional and acting-out behaviors, to join gangs, and to own guns.

Causes of delinquency. The spectrum of results from the research program strongly indicates that there is no single cause of delinquency or substance use in juveniles. Instead, a pattern of causes is apparent. This pattern may vary from one youth to another and may vary with age.

Delinquency as a cause. Results reported here suggest that delinquency and drug use exert a rather sizable impact on many other variables. Indeed, they affect factors typically thought of as their causes. These include attachment to parents, family interaction, commitment to school, reading problems, and

Delinquency and drug use exert a rather sizable impact on factors typically thought of as their causes.

Prevention programs need to start early in life because of the observed early age of onset of serious forms of delinquency and drug use.

association with delinquent peers. Each of these factors has been shown to be influenced by prior levels of delinquency and drug use.

Importance of peers. Association with delinquent and drug-using peers has a central impact on the delinquency and drug use of the subject. This was seen in the analyses of peer associations, gang membership, and gun ownership.

Developmental pathways. We found that delinquency (and also substance use) often develops according to an orderly progression from less to more serious behaviors. We also found that youth can be in more than one deviant pathway, and those youth in multiple pathways are most seriously delinquent.

Summary

We noted earlier that delinquency, drug use, and related behaviors begin at earlier ages than generally thought. We close by pointing out that at the end of our data collection period, delinquency and drug use continue to increase among youth in the studies (see chapter 3). The high rate and severity of criminal conduct associated with the early adult years have not yet been reached, but they will be, most assuredly, by many subjects of this research program.

Because of this, the results of this research cover only a portion of the subjects' total criminal careers. Thus the results must be viewed as somewhat incomplete—reflecting the best evidence we can currently muster, but coming in before the full life stories of these subjects can be told. Only by continuing to follow the subjects in the future can a fuller, more complete picture of the causes and correlates of delinquency be seen, and a fuller set of policy implications drawn.

Programmatic implications

The results of the Program of Research on the Causes and Correlates of Juvenile Delinquency have a number of implications for such delinquency prevention and intervention programs as the Weed and Seed Initiative. The concluding section discusses some of these implications in two ways. The first concerns general characteristics that all intervention programs—both prevention and treatment programs—should have. The second focuses on several content areas that could be incorporated into intervention programs.

Characteristics of intervention programs

Based on the results of this research, the following four general characteristics of delinquency prevention and treatment programs can be listed:

- Prevention programs need to start early in life because of the observed early age of onset of serious forms of delinquency and drug use. Waiting until the high school years may be far too late for many serious offenders. By that time, juveniles' characters are already well formed, and they are often resistant to change and able to thwart efforts by others to change their

behavior for the better. Intervention programs beginning as early as the elementary school years will probably be most effective in the long run.

- Delinquent careers follow a set of behavioral pathways that progress from less serious to more serious forms of behavior. Prevention programs should be designed to intercept or short-circuit youth in these pathways before their behavior becomes more ingrained. In doing so, knowledge of each juvenile's position along these pathways would be useful because it can help in targeting resources that meet the youth's specific needs. Failure to consider developmental pathways in the design of intervention programs will probably lead to less efficient and less effective programs.
- Intervention programs for delinquents, especially serious delinquents, need to be comprehensive in at least two ways. First, they need to deal with the multiple, co-occurring problem behaviors experienced by serious delinquents. It is unlikely that delinquency will be the only problem presented by these youth. They are likely to be involved in drug use, precocious sexual activity, school failure, juvenile gangs, owning guns, and other related problem behaviors. While not all serious delinquents will experience all of these problems, they are likely to experience more than one of them, and intervention programs should provide services to deal with them.

The second sense in which delinquency intervention programs should be comprehensive is in terms of the multiple and interlocking causes associated with delinquency. There is no single cause of delinquency. Factors such as family, school, peers, and neighborhoods are all related to delinquency. Moreover, they appear to be *interrelated*; for example, it appears that youth who are poorly supervised by their parents *and* who associate with delinquent peers have higher rates of delinquency and drug use than youth who have only one of these risk factors. Because of this, intervention programs need to deal with multiple factors and their interrelationships.

- Intervention programs should be designed for the long term, because risk factors usually have a long-term effect on juveniles' behavior. Also, for many youth, serious delinquency is often a stable behavior pattern. Thus intervention programs lasting 6 or 10 months with youth returning to the same high-risk environment from which they came are not likely to produce any lasting results. To combat delinquency successfully, we must develop comprehensive intervention programs that provide social and psychological support to these adolescents for years, not months. Although expensive, these programs are likely to be cost effective in the long run by counteracting the multiple factors that lead to serious delinquency and by reducing the overall cost of later crimes and treatment.

This strategy of long-term involvement is consistent with recent research on delinquency treatment programs that shows that while these programs have few substantial posttreatment effects, they can have substantial effects during treatment. That is, while adolescents are enrolled in well-designed and well-organized treatment programs, their behavior tends to improve. When they leave the programs, however, especially if they return to their earlier social environment, delinquency is likely to reemerge. Because of this, it may be

Comprehensive intervention programs should provide social and psychological support for years, not months.

These findings provide some suggestions for prevention and treatment strategies.

necessary to substantially increase exposure to these programs so that the benefits observed during treatment can be extended and gradually result in humane and useful lives for these youngsters.

Content areas for intervention

Several related themes run through the research reported here (and much prior research as well) indicating that attachment and social integration with successfully socialized individuals and groups provide a buffer against delinquency and drug use. Such attachment involves positive emotional ties, a sense of belonging, and a sense of doing well in prosocial contexts such as family, school, and community activities, and with prosocial friends. On the other hand, the evidence indicates that attachment and integration in antisocial contexts and with antisocial friends often lead to antisocial behavior. Thus, the development of prosocial attachment and integration deters antisocial attachment and integration and provides a strategy both to prevent initiation of delinquency and for treatment for those who become delinquent.

How, though, does one become attached and integrated in prosocial contexts? To become attached and integrated, individuals need the opportunity to participate and the social, personal, and educational skills that allow them to be a success in a prosocial context. For some of our youth, families do not provide an appropriate prosocial setting in which youth can become attached. In most of our schools, some youth have to fail (regardless of ability) in order that other youth can be considered "successes," and those who fail do not feel a sense of attachment. Some youth have never been given the opportunity to develop social and personal skills that allow them to participate successfully in extracurricular or community activities—or even if they have personal skills, have lacked a real opportunity to participate. Some youth, on the other hand, fit all of the above categories and often find attachment and integration with other similar youth and with others "out in the street."

These observations, coupled with observations about early onset, the high prevalence of serious offending, and the observation that many serious offenders are able to avoid contact with the juvenile justice system, suggest that an emphasis on both prevention and treatment are needed. They also provide some direct suggestions for prevention and treatment strategies.

Providing prosocial, positive families for all youth probably lies beyond the scope of the juvenile justice system. But improving training in parenting skills and providing support services to empower parents to monitor and supervise their children more effectively is certainly within its scope. Also, attempting to ensure that youth in "treatment for delinquency" return to more effective and caring homes may in some cases be possible. These types of programs need to be developed, implemented, and evaluated so that strengthened families can help reduce the involvement of youth in delinquency.

Schools clearly play a major role in our children's lives, and as this report indicates, schools are the public agency parents first turn to for help with the problem behavior of their children. Thus, early prevention efforts may need a school

focus. However, to obtain attachment and integration among all youth, school programs that ensure that *all* youth can be successes somewhere in the school setting are needed. Prototypes for such programs are currently being developed and used, and the support for these programs and the involvement of adjudicated youth in these programs to examine their efficacy as a treatment seems a natural position for OJJDP. Also, the finding that many parents seek help from schools for the delinquent behavior of their children suggests that examining ways in which schools could be prepared to provide help for such parents (a job they are not now prepared for) could be very beneficial. OJJDP could pioneer development of such integrated strategies and programs.

Creating and supporting prosocial community contexts in which youth can be a success also provides prevention and potential treatment referral sources. However, this cannot simply be support for various groups, clubs, or activities. It must entail and enforce activities and processes that ensure that *all* participants can succeed and become attached to the prosocial context.

Finally, in all of the contexts, the prevention of the development of delinquent peer groups must be a priority. Bringing only predelinquent or delinquent youth together to engage in school, community, or other activities seems likely to be counterproductive. It provides the opportunity for attachment and integration with individuals already predisposed to delinquent values and attitudes and who have "delinquent knowledge" to share. Thus, creating such groups may often lead to increases (rather than decreases) in delinquent involvement. Programs that integrate delinquency-prone youth into generally prosocial groups may be an essential element of successful intervention programs. To be viable these programs will probably need substantial adult involvement to monitor the activities of the group and channel it towards prosocial outcomes.

Support for and development of family, school, and community programs that have or adopt strategies fostering success among all participants (and not just some participants) and provision of a range of programs so that all youth can be successful in at least some of them provides one strategy for the prevention and intervention of delinquency. Further, this strategy appears appropriate and may be very important for both the child and adolescent years.

In sum, the research results reported here suggest that efforts to reduce delinquent behavior should start early, be comprehensive and long-term, and attempt to interrupt developmental pathways before serious, chronic delinquency emerges. They also suggest that intervention programs should focus on family, school, peer, and neighborhood factors; and within these settings, focus on developing effective and caring monitoring and success opportunities that lead to attachment to prosocial groups and activities. Many of these programmatic ingredients are incorporated into OJJDP's delinquency prevention programs. These programs are consistent with the results of these longitudinal research projects and, from this perspective, should be given high priority in program development.

Bringing only predelinquent or delinquent youth together seems likely to be counterproductive.

Glossary

at risk: describes a group of people who are statistically more likely to experience a particular event or state. For example, youth at risk for delinquency have a higher probability of being delinquent than those who are not at risk. (See *risk factor*.)

cohort: as used here, means either age cohorts—those who were born in the same year—or school-grade cohorts—those who were in the same grade at the same time.

longitudinal study: a study in which repeated observations are made on the same subjects over time. It differs from a cross-sectional study design in which subjects are observed at one point in time only.

oversampling: a sampling design in which some types of subjects are overrepresented and other types are underrepresented in the final sample. This contrasts with proportionate sampling in which all types of subjects are proportionately represented. In the present studies we oversampled—that is selected more—youth at risk so that there would be enough serious, violent, and chronic offenders to study. (See *weighting*.)

panel study: a subtype of longitudinal study. The panel is the group of people who are observed over time.

risk factor: a factor or variable that places a person at risk for maladjustment. For example, living in a high-crime-rate area is a risk factor for delinquency inasmuch as it increases the chances of delinquent behavior occurring.

weighting: a statistical procedure that corrects oversampled cases so that representative population data can be computed.

- ☐ Researchers
- ☐ Planners
- ☐ Policymakers



For more detailed information about this study and issues surrounding urban delinquency and substance abuse is available through the Juvenile Justice Clearinghouse.

The *Urban Delinquency and Substance Abuse: Technical Report and Technical Appendices* provide a comprehensive and detailed discussion of the study's findings and its design and research methodologies. The *Technical Report* and *Technical Appendices* are useful for conducting further research, making planning decisions, or developing policy.

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